Snavely King Majoros O'Connor & Lee
National Study of Other Production Unit Lives
2006 Study

I. Introduction

Snavely King Majoros O'Connor & Lee, Inc. ("Snavely King") performed a study of U.S. Other Production Unit Lives[1] using analytical techniques generally accepted in the utility industry and a database maintained by the U.S. Department of Energy ("DOE"). Snavely King concludes that the lives of the U.S. Other Production Units are experiencing average life spans of approximately 50 years.

II. Database and Methodology

The DOE's Energy Information Administration ("EIA") requires every owner of an electric utility generating plant to file a Form 860 describing the status of its generating facilities. From these reports, EIA maintains data on the installation and retirements of generating units around the country.

The data utilized in this study is available on the EIA's web site. The primary data used in Snavely King's study is located in the Form 860 database files. The data was downloaded in several steps into a single Microsoft Access file and developed into inputs[2] for Snavely King's actuarial analysis program.

III. Analysis

Snavely King's 2006 update ("2006 Update") consisted of an analysis of the full band (1915-2006) and the most recent ten-year band (1997-2006) of data. The full band analysis had a best fit result of 50 S0.5, which indicates a 50 year life. The ten-year band best fit was a 50 R0.5, which indicates a 50 year life.

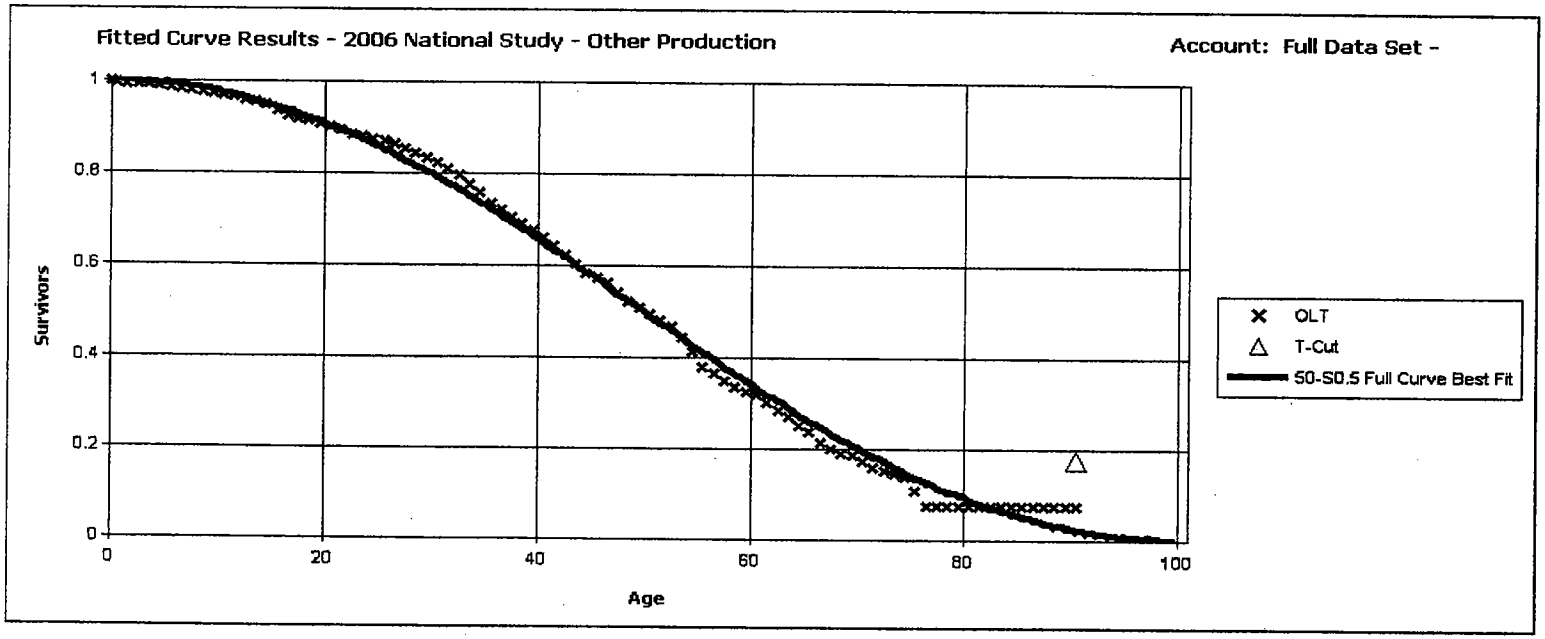
Finally, Snavely King preformed a "shrinking band" analysis, in which the final year was held constant and the bands were continually shrunk. The results are shown below.

Shrinking Band Analysis

Band	Width	Life	Curve Type
2002-2006	5	43	L0
1997-2006	10	50	R0.5
1992-2006	15	51	R1
1987-2006	20	50	R1
1982-2006	25	47	S0

[1] Other Production Units in this study are considered as Combusting (Gas) Turbines (including jet engine designs), Internal Combustion Engine (diesel, piston) and Combined Cycle Combustion Turbine generating units.

[2] Various sorts were made to refine the data and to remove bad data. For instance, some units listed as retired had no retirement dates indicated, etc.



Analytical Parameters

OLT Placement Band:	1915 - 2006
OLT Experience Band:	1915 - 2006
Minimum Life Parameter:	1
Maximum Life Parameter:	100
Life Increment Parameter:	1
Max Age (T-Cut):	92.0

Best Fit Curve Results
2006 National Study - Other Production
Account: Full Data Set -

Curve	Life	Sum of Squared Differences
BAND	1915 - 2006	
S0.5	50.0	400.971
S1	50.0	432.746
R1.5	49.0	525.805
L2	51.0	661.377
L1.5	51.0	904.554
R1	49.0	1,007.595
S0	49.0	1,179.115
S1.5	50.0	1,180.871
R2	50.0	1,299.153
L1	51.0	2,121.823
L3	51.0	2,678.501
S2	51.0	2,701.452
R0.5	48.0	2,805.946
R2.5	50.0	2,869.604
S-0.5	48.0	3,171.055
L0.5	51.0	3,847.943
R3	50.0	5,616.852
L0	51.0	6,339.838
O1	47.0	6,416.110
S3	51.0	7,191.810
O2	52.0	8,244.710
L4	51.0	9,160.698
R4	51.0	12,042.745
S4	51.0	15,052.133
O3	64.0	17,366.231
L5	51.0	17,474.300
R5	51.0	21,444.751
O4	84.0	21,905.574
S5	51.0	23,899.724
S6	51.0	32,433.821
SQ	51.0	51,452.552

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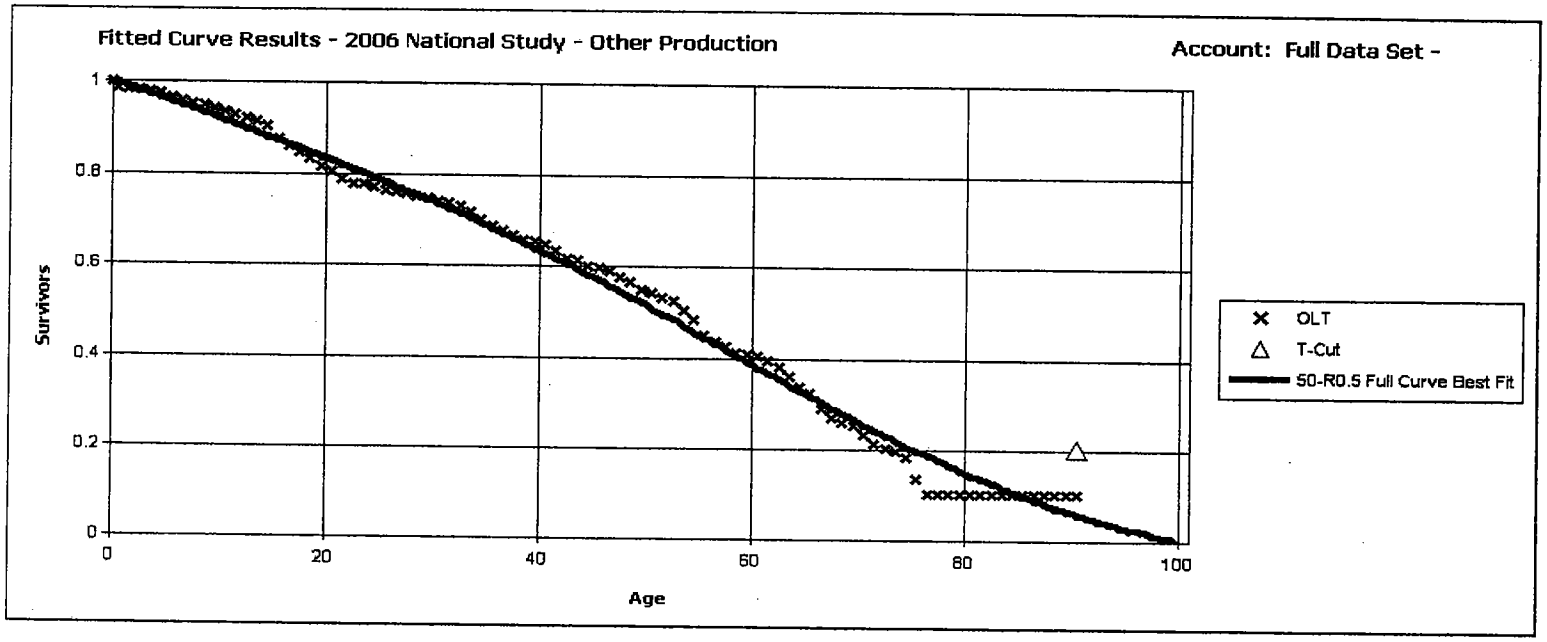

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Best Fit Curve Results
2006 National Study - Other Production
Account: Full Data Set -

Curve	Life	Sum of Squared Differences
BAND	1997 - 2006	
R0.5	50.0	609.859
S-0.5	50.0	921.382
R1	51.0	932.246
S0	51.0	1,085.767
L0.5	52.0	1,881.619
L1	52.0	1,884.621
O1	49.0	2,029.514
S0.5	52.0	2,076.028
R1.5	52.0	2,432.511
L0	53.0	2,635.341
L1.5	53.0	2,756.984
O2	54.0	3,251.048
S1	52.0	3,909.978
L2	53.0	4,591.942
R2	52.0	5,118.036
S1.5	53.0	6,264.151
R2.5	53.0	8,498.373
O3	66.0	9,217.495
S2	53.0	9,450.341
L3	54.0	10,237.454
O4	86.0	12,365.760
R3	53.0	13,069.801
S3	54.0	16,607.378
L4	54.0	19,655.879
R4	54.0	22,386.099
S4	54.0	27,068.849
L5	55.0	30,183.631
R5	55.0	34,679.860
S5	55.0	37,757.281
S6	54.0	47,537.233
SQ	54.0	67,057.979

Analytical Parameters

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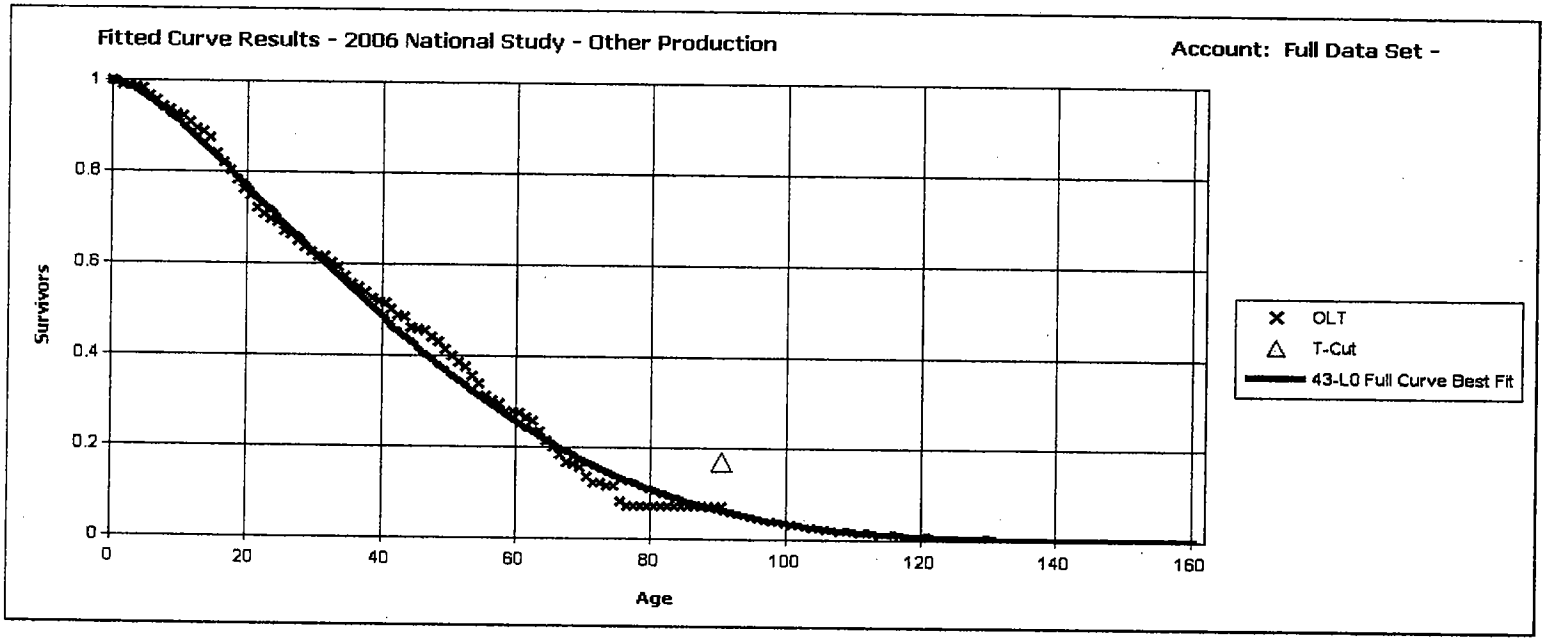

Analytical Parameters

OLT Placement Band:	1915 - 2006
OLT Experience Band:	2002 - 2006
Minimum Life Parameter:	1
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Best Fit Curve Results
2006 National Study - Other Production
Account: Full Data Set -

Curve	Life	Sum of Squared Differences
BAND	2002 - 2006	
L0	43.0	570.514
L0.5	44.0	733.272
O1	42.0	807.800
S-0.5	43.0	1,073.940
O2	44.0	1,097.520
R0.5	43.0	1,364.704
L1	44.0	1,625.260
S0	43.0	2,514.163
R1	43.0	3,486.196
L1.5	44.0	3,540.542
S0.5	44.0	4,562.316
O3	51.0	6,013.842
R1.5	44.0	6,246.758
L2	44.0	6,338.362
S1	44.0	7,371.521
O4	64.0	9,798.844
R2	44.0	10,081.373
S1.5	44.0	10,660.152
L3	44.0	14,297.055
R2.5	44.0	14,369.717
S2	44.0	14,687.789
R3	44.0	19,693.366
S3	44.0	23,107.335
L4	44.0	25,940.554
R4	44.0	29,708.113
S4	44.0	34,177.292
L5	44.0	37,025.036
R5	44.0	41,663.706
S5	44.0	44,516.800
S6	43.0	53,411.639
SQ	42.0	70,413.367

Analytical Parameters

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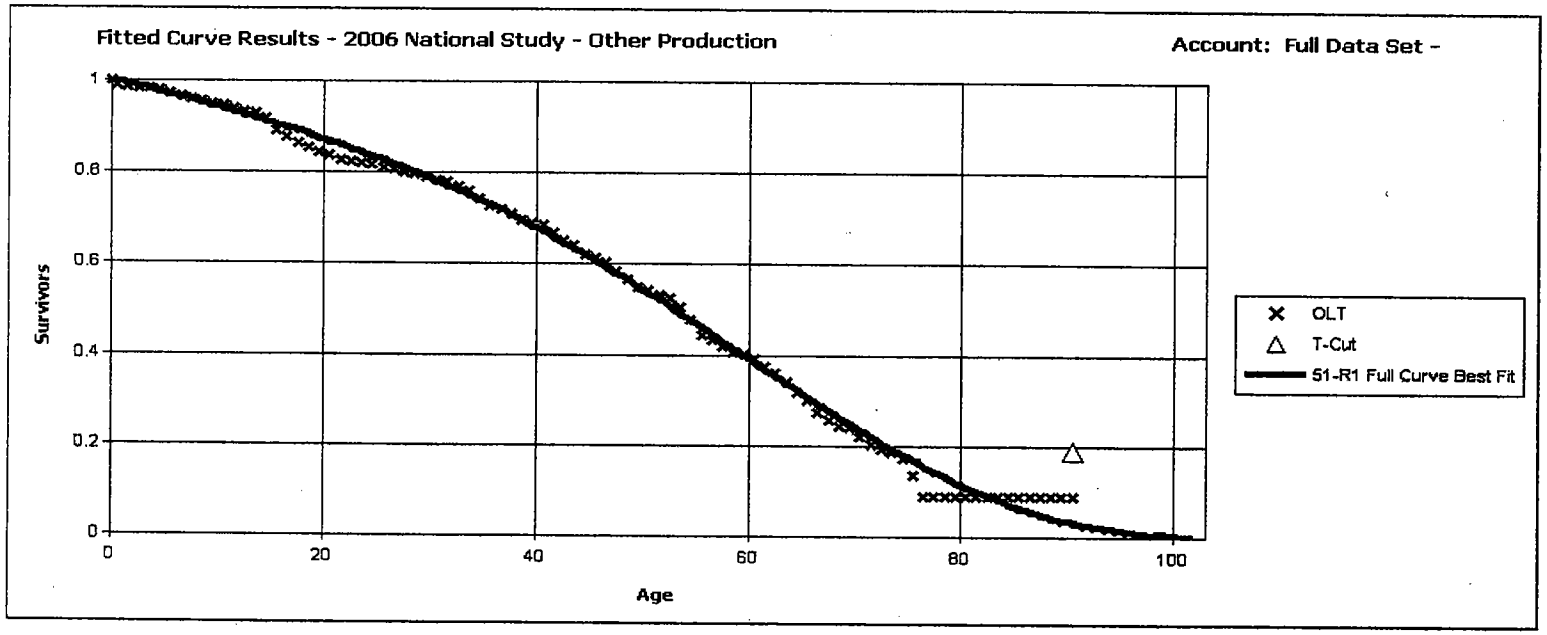


Analytical Parameters

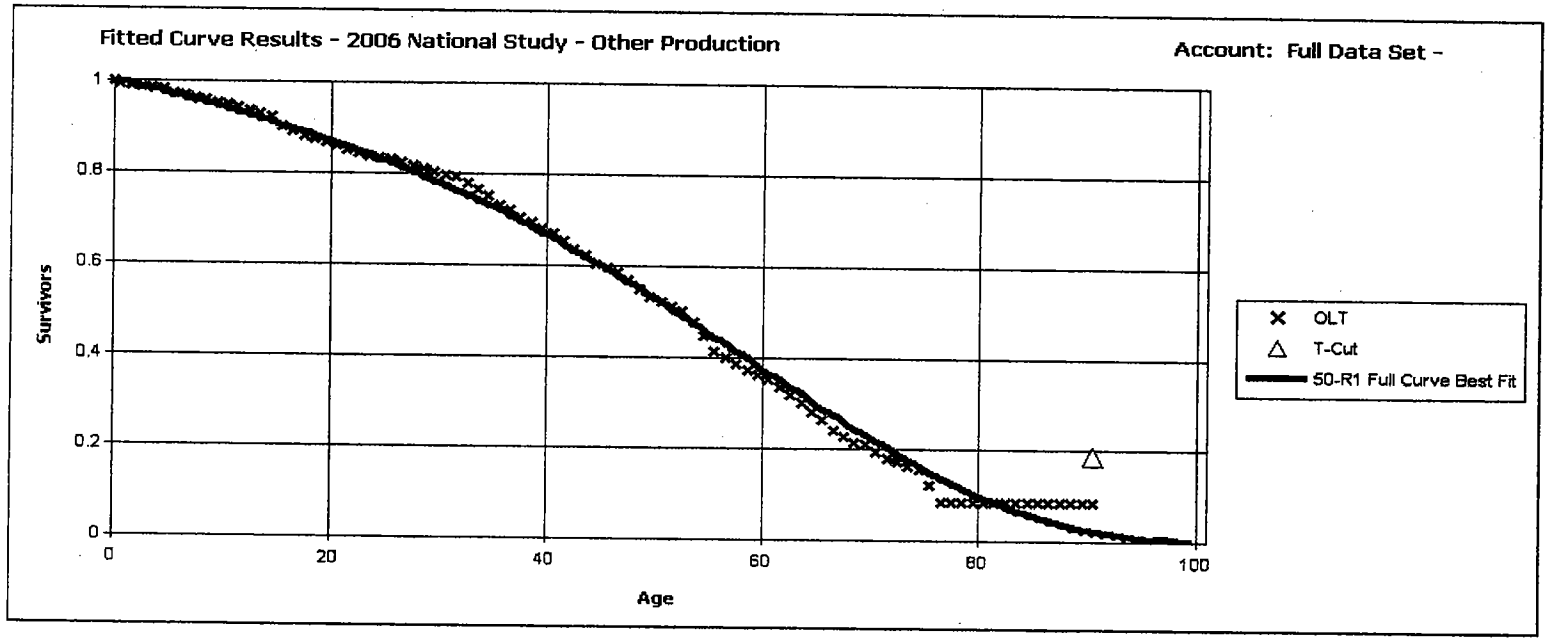
OLT Placement Band:	1915 - 2006
OLT Experience Band:	1992 - 2006
Minimum Life Parameter:	1
Maximum Life Parameter:	100
Life Increment Parameter:	1
Max Age (T-Cut):	92.0

Best Fit Curve Results
2006 National Study - Other Production
Account: Full Data Set -

Curve	Life	Sum of Squared Differences
BAND	1992 - 2006	
R1	51.0	373.338
S0	51.0	803.503
R1.5	52.0	932.509
S0.5	52.0	942.953
R0.5	50.0	1,169.078
S-0.5	50.0	1,635.602
L1.5	53.0	1,855.708
L1	53.0	1,932.967
S1	52.0	1,935.752
R2	52.0	2,651.549
L0.5	53.0	2,670.279
L2	53.0	2,769.720
S1.5	53.0	3,472.572
O1	49.0	3,723.966
L0	53.0	4,176.289
R2.5	53.0	5,175.949
O2	54.0	5,258.105
S2	53.0	5,852.621
L3	54.0	6,508.614
R3	53.0	8,858.409
S3	54.0	11,661.901
O3	67.0	12,537.541
L4	54.0	14,245.641
O4	88.0	16,145.723
R4	54.0	16,861.330
S4	54.0	20,824.962
L5	54.0	23,662.298
R5	54.0	27,915.173
S5	54.0	30,717.660
S6	54.0	40,053.065
SQ	54.0	59,379.950

Analytical Parameters

OLT Placement Band:	1915 - 2006
OLT Experience Band:	1992 - 2006
Minimum Life Parameter:	1
Maximum Life Parameter:	100
Life Increment Parameter:	1
Max Age (T-Cut):	92.0



Analytical Parameters

OLT Placement Band:	1915 - 2006
OLT Experience Band:	1987 - 2006
Minimum Life Parameter:	1
Maximum Life Parameter:	100
Life Increment Parameter:	1
Max Age (T-Cut):	92.0

Best Fit Curve Results
2006 National Study - Other Production
Account: Full Data Set -

Curve	Life	Sum of Squared Differences
BAND	1987 - 2006	
R1	50.0	407.076
S0.5	51.0	561.418
R1.5	50.0	600.198
S0	50.0	729.878
S1	51.0	1,217.407
L1.5	52.0	1,275.730
R0.5	49.0	1,502.486
L2	52.0	1,767.225
L1	52.0	1,767.358
S-0.5	49.0	1,928.851
R2	51.0	1,997.721
S1.5	52.0	2,479.248
L0.5	52.0	2,833.270
R2.5	51.0	4,194.343
O1	48.0	4,384.240
S2	52.0	4,523.014
L0	52.0	4,666.417
L3	53.0	4,875.081
O2	53.0	6,004.430
R3	52.0	7,470.060
S3	52.0	9,843.788
L4	53.0	12,106.296
O3	65.0	13,988.226
R4	52.0	14,856.560
O4	85.0	17,978.888
S4	53.0	18,388.649
L5	53.0	20,995.287
R5	53.0	25,112.445
S5	53.0	27,742.382
S6	52.0	36,631.534
SQ	53.0	55,655.989

Analytical Parameters

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OLT Experience Band:	1987 - 2006
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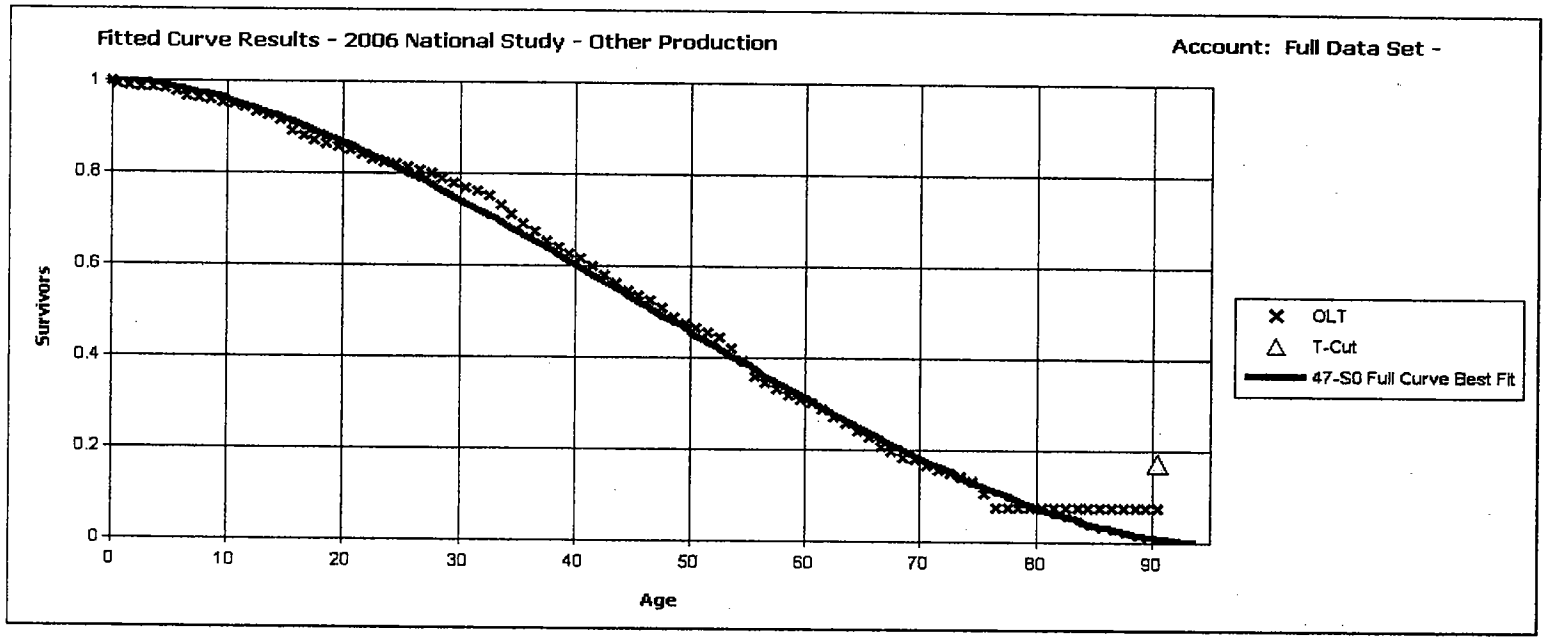

Analytical Parameters

OLT Placement Band:	1915 - 2006
OLT Experience Band:	1982 - 2006
Minimum Life Parameter:	1
Maximum Life Parameter:	100
Life Increment Parameter:	1
Max Age (T-Cut):	92.0

Best Fit Curve Results
2006 National Study - Other Production
Account: Full Data Set -

Curve	Life	Sum of Squared Differences
BAND	1982 - 2006	
S0	47.0	436.315
R1	47.0	447.815
S0.5	48.0	558.954
L1.5	49.0	811.212
R0.5	46.0	992.633
L1	49.0	995.881
R1.5	48.0	1,067.941
S-0.5	47.0	1,209.038
L2	49.0	1,579.596
S1	48.0	1,585.670
L0.5	49.0	1,839.119
R2	48.0	2,856.566
S1.5	49.0	3,105.025
O1	46.0	3,246.618
L0	49.0	3,444.781
O2	50.0	4,794.791
R2.5	49.0	5,346.921
L3	50.0	5,397.725
S2	49.0	5,442.534
R3	49.0	8,899.024
S3	49.0	11,185.926
O3	60.0	12,830.068
L4	50.0	13,448.811
R4	49.0	16,545.762
O4	78.0	17,201.400
S4	49.0	20,048.824
L5	49.0	22,634.242
R5	49.0	26,792.613
S5	49.0	29,391.583
S6	49.0	38,145.975
SQ	48.0	56,837.585

Analytical Parameters

OLT Placement Band:	1915 - 2006
OLT Experience Band:	1982 - 2006
Minimum Life Parameter:	1
Maximum Life Parameter:	100
Life Increment Parameter:	1
Max Age (T-Cut):	92.0